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PATENT SPECIFICATION

Application Date: Feb. 19, 1937. No. 5044/37.

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Complete Specification Accepted: Aug. 19, 1938.

PROVISIONAL SPECIFICATION

Improvements in or relating to Television Apparatus

I, ARCHIBALD MONTGOMERY LOW, a British Subject, of 1, Woodstock Road, London, W.4, do hereby declare the nature of this invention to be as follows:—

It has been proposed in connection with television apparatus to group together a comparatively large number of photo-electric cells in mosaic or honey-comb fashion, primarily with a view to the production of a picture which will be bright enough at the receiving end to be projected, and such a group of cells being primarily designed for televising a picture projected thereon at the transmitting end.

The object of the present invention is to provide a convenient method of producing such a mosaic of cells, and it consists broadly stated in coating one face of a carrier or screen of suitable conducting material, such as copper of any convenient size, with a coating of material possessing photo-electric properties, such as a caesium alloy, and the opposite face being provided with a layer of non-conducting material, such as soft resin. This screen, including the coatings on both sides is then sectioned, as by right angled cuts, so that a group of insulated cells of comparatively small size is formed, these sections being held together in any suitable manner, as by a surrounding frame with insulating material between the cells. Each of the cells thus produced can have a cable connected thereto and the several cables being connected in conventional manner to the transmitter, or in the case of the land-lines direct to the receiving apparatus.

Dated this 19th day of February, 1937.

For the Applicant,
HERBERT HADDAN & Co.,
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31 and 32, Bedford Street, Strand,
London, W.C.2.

COMPLETE SPECIFICATION

Improvements in or relating to Television Apparatus

I, ARCHIBALD MONTGOMERY LOW, a British Subject, of 1, Woodstock Road, London, W.4, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

It has been proposed in connection with television apparatus to provide a screen structure comprising a carrier coated with a photo-electric surface divided up to form a mosaic of photo-electric elements, such a screen being disposed inside an electric discharge tube, and an image of the object to be televised being projected by a suitable lens system on to the photo-electric elements whereby the latter acquire a small electric charge in proportion to the light stimulation; the elements are scanned by a ray in the tube and the resultant signals are transmitted by suitable apparatus in known manner. The resultant current impulses may be transmitted to a receiving apparatus over wire by, for example, the elements of the mosaic being each connected by a conductor to a commutator which in turn is connected by a conductor to a receiver so that the latter is connected in succession to each of the mosaic elements, the receiver in known manner positioning in synchronism with the selector the spots of light on a screen therein. A screen for use with the above mentioned system has been proposed in which a coating of electrically conductive material is applied to a sheet of insulating material and such coating is ruled with a sharp edged instrument along crossing lines so that the coating is divided into a large number of separate elements, and the incisions may extend slightly into the sheet of insulating material. A conductive layer may be provided on the opposite side of the insulating material to that carrying the mosaic.

It has also been proposed to transmit the images over wire by means comprising a photo-electric cell embodying a plate coated with a photo-sensitive substance which is subdivided into a number of cells by incising the coating lengthwise and crosswise, each of the elements being connected by a wire to a commutator as described.

According to the present invention such a mosaic of photo-electric elements is produced by coating one face of a carrier plate of conducting material such as copper, with a coating possessing photo-electric properties, such as caesium alloy, applying a backing of non-conductive material to the reverse face of said carrier and sectioning said carrier with its coating by crossing cuts extending completely through the carrier and coating to form a mosaic of separate photo-electric elements. The backing may consist of any suitable non-conductive material, such as resin, which is so applied to the carrier plate as to fill the spaces between the separate elements.

The invention is illustrated in the accompanying drawings, in which:—

Fig. 1 is a face view to an enlarged scale of a part of the mosaic of photo-electric elements produced according to the invention.

Fig. 2 is a cross section on the line 2—2 of Fig. 1, and

Fig. 3 is a cross section showing a modification.

a designates the carrier which as previously stated is of suitable conducting material, such as a plate of copper, one face of which is provided with a coating *b* of material possessing photo-electric properties, such as caesium alloy, and the opposite face being provided with a backing *c* of non-conducting material such as soft resin. The plate *a* with coating *b* is sectioned by right angled cuts *d* extending right through the plate *a* and coating *b*, so that a group of cells or elements *e* of comparatively small size is formed insulated by the gaps between them. Each of the elements thus produced may have a wire lead *f* connected thereto, the several wires being connected in conventional manner to the transmitter, or in the case of land lines direct to the receiving apparatus.

As an alternative construction, the backing *c* of insulating material may be run in between the sections to insulate them as shown in Fig. 3, and a frame *g* may be provided to surround the structure.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A method of producing a mosaic of photo-electric elements for use in television apparatus, which consists in coating one face of a carrier plate of conducting material, such as copper, with a coating of material possessing photo-electric properties, such as caesium alloy, applying a backing of non-conductive material to the reverse face of said carrier and sectioning said carrier with its coating by crossing cuts extending completely through the carrier and coating to form a mosaic of separated photo-electric elements.

2. A method of producing a mosaic of photo-electric elements for use in television apparatus, which consists in coating one face of a carrier plate of conducting material such as copper with a coating of material possessing photo-electric properties, such as caesium alloy, sectioning said carrier with its coating by crossing cuts extending completely through the carrier and coating to form a mosaic of photo-electric elements, and applying a backing of non-conductive material, such as resin, to the uncoated face of said carrier so that the spaces between the photo-electric elements constituting the mosaic are filled in.

3. A mosaic of photo-electric elements produced by the method according to the claims 1 or 2.

Dated this 15th day of February, 1938.

For the Applicant,
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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig.1.

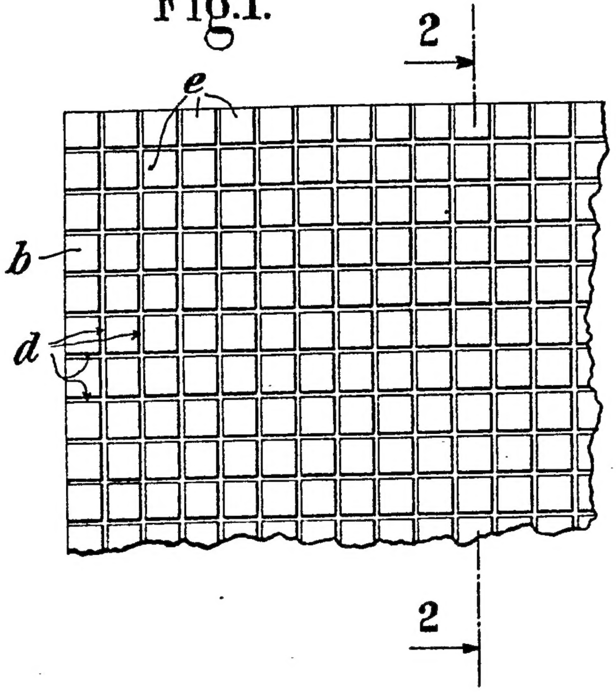


Fig.2

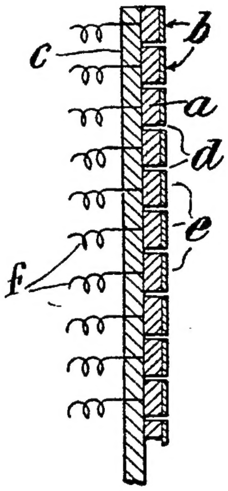
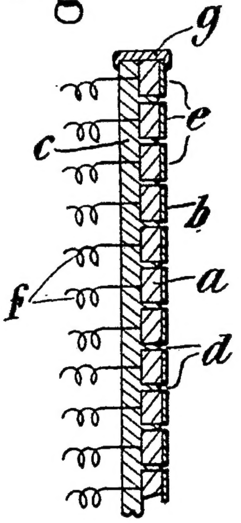


Fig.3.



Malby & Sons, Photo-Lith.